AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 of 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0006	19-Nov-2003	W16ROE-3203-8775	

6. ISSUED BY CODE DACW51

USA ENGINEER DISTRICT, NEW YORK
ATTN: CENAN-CT ROOM 1843
26 FEDERAL PLAZA (DACW51)
NEW YORK NY 10278-0090

7. ADMINISTERED BY (If other than item 6) CODE

CIVIL WORKS TEAM
26 FEDERAL PLAZA
NEW YORK NY 10278-0090

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)

CODE FACILITY CODE

X	9A. AMENDMENT OF SOLICITATION NO. DACW51-03-B-0019
X	9B. DATED (SEE ITEM 11) 22-Aug-2003
	10A. MOD. OF CONTRACT/ORDER NO.
	10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [X] is extended, [ ] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this amendment is to incorporate the following changes:

1) To change the bid opening from 02 December 03 to 06 January 04, 1:30 PM. The bid opening location remains the same.
2) To add new specification section 02340, CELLULAR CONFINEMENT SYSTEM.
3) To replace sheets numbered 1, 2, 6, 10, 26 and 32 with new sheets numbered 1, 2, 6, 10, 26 and 32.

Note: Bidders must acknowledge receipt of this amendment by the date specified in the solicitation (or as amended) by one of the following methods: In the space provided on the SF1442, by separate letter, or by telegram, or by signing the block 15 below. FAILURE TO ACKNOWLEDGE AMENDMENTS BY THE DATE AND TIME SPECIFIED MAY RESULT IN REJECTION OF YOUR BID IN ACCORDANCE WITH THE LATE BID, LATE MODIFICATIONS OF BIDS OR LATE WITHDRAWAL OF BIDS (FAR 14.304)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
	TEL: EMAIL:

15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY (Signature of Contracting Officer)	19-Nov-2003

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION SF 30 - BLOCK 14 CONTINUATION PAGE

The following have been added by full text:

AMENDMENT 0006

AMENDMENT NO. 6 TO SPECIFICATIONS FOR GREEN BROOK SUB BASIN OF THE RARITAN RIVER GREEN BROOK FLOOD CONTROL PROJECT SEGMENT U BOROUGH OF BOUND BROOK NEW JERSEY

TO BIDDERS

1. **Bid Opening**: The time and date of bid opening is changed to 1:30 PM, Tuesday 6 January 2004. The place of bid opening remains unchanged.
2. **Specifications**
   a. Add new Specification Section 02340 CELLULAR CONFINEMENT SYSTEM included with this amendment.
3. **Drawings**:
   a. Replace Sheets 1, 2, 6, 10, 26 and 32 with new Sheets 1, 2, 6, 10, 26 and 32 furnished with this amendment.

4. This Amendment shall be attached to the specifications and shall be a part thereof.

SECTION 00010 - SOLICITATION CONTRACT FORM

The required response date/time has changed from 02-Dec-2003 01:30 PM to 06-Jan-2004 01:30 PM.

(End of Summary of Changes)

SECTION 02340

CELLULAR COMFINEMENT SYSTEM

03/00

Item No. 55 - Cellular Confinement System (Geocells)
Item No. 56 - Erosion Control Blanket

PART 1 GENERAL

Cellular confinement system used for channel protection.
Related section: SECTION 02300 -- Earthwork

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act	(1995) Federal Seed Act Regulations Part 201

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1505	Density of Plastics by the Density-Gradient Method
ASTM D 1693	Environmental Stress-Cracking of Ethylene Plastics
ASTM D 5199	Measuring Nominal Thickness of Geotextiles and Geomembranes
ASTM E 41	Terminology Relating to Conditioning

1.2 SYSTEM DESCRIPTION

Cellular confinement system consists of geocell material into which specific infill materials are placed. Geocell material is a polyethylene sheet strip assembly, connected by a series of offset, full-depth, ultrasonic welded seams aligned perpendicular to longitudinal axis of strips which, when expanded, form walls of a flexible, three-dimensional, cellular confinement system.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation. When used, a designation following the "G" designation identifies the

office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Layout; G
Obstructions Below Ground; G

Scale drawings defining areas to receive recommended materials as required by federal, state or local regulations.

Seed Establishment Period; G

Calendar time period for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described.

Maintenance Record; G

Submit Manufacturer's product data.

Record of maintenance work performed, of measurements and findings for product failure, recommendations for repair, and products replaced.

Anchors; G

Submit manufacturer's shop drawings including section layout, direction of expansion, anchor stake locations, and anchor stake depth.

SD-03 Product Data; G

Geocells; G
Manufacturer's literature including physical characteristics, application and installation instructions.

Equipment; G

A listing of equipment to be used for the application of erosion control materials.

Finished Grade; G
Erosion Control Blankets; G

Condition of finish grade status prior to installation; location of underground utilities and facilities.

SD-04 Samples; G

1. Cell sections.
2. Tendons.
3. Load transfer pins.
4. Stake anchors.
5. Related geosynthetic components supplied under this section.

Materials

a. Erosion control blankets; 150 mm 6 inch square.

b. Cell sections.

c. Load transfer pins.

SD-06 Test Reports

Erosion Control Blankets; G
Cellular Confinement System - Geocells; G

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

SD-07 Certificates; G

Fill Material; G
Geotextile Cells; G

Prior to delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following.

For items listed in this section:

a. Certification of recycled content or,

b. Statement of recycled content.

c. Certification of origin including the name, address and telephone number of manufacturer.

d. Manufacturer's certification of polyethylene used to make geocell material.

e. Resin manufacturer's certification of polyethylene density and ESCR.

Erosion Control Plan; G

Construction Work Sequence Schedule; G

Installer's Qualification; G

The installer's company name and address; certification stating that the installer is experienced in the installation of the specified products.

Manufacturer's Field Representative's Qualifications; G

Certification stating that the Manufacturer's Field Representative is experienced in the installation of the specified products.

Seed; G

Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.

SD-10 Operation and Maintenance Data; G

Maintenance Instructions; G
Instruction for year-round care of installed material. The Contractor shall include manufacturer supplied spare parts.

1.4 PRE-APPLICATION MEETING

Convene a pre-application meeting 2 weeks before the start of installation of the cellular confinement system. Require attendance by parties directly affecting work of this section, including the Contractor, the Contracting Officer, the Installer, and the Manufacturer's Representative. Review installation and coordination with other work.

1.5 DESCRIPTION OF WORK

Cellular confinement system consists of geocell material into which specific infill materials are placed. Geocell material is a polyethylene sheet strip assembly, connected by a series of offset, full-depth, ultrasonic welded seams aligned perpendicular to longitudinal axis of strips which, when expanded, form walls of a flexible, three-dimensional, cellular confinement system.

The work shall include the furnishing and installing an erosion control blanket and miscellaneous related work over the Geocell to promote growth of plant life over the cells.

1.6 DELIVERY, INSPECTION, STORAGE, AND HANDLING

Materials shall be stored in designated areas and as recommended by the manufacturer protected from the elements, direct exposure, and damage. Containers shall not be dropped from trucks. Material shall be free of defects that would void required performance or warranty.

a. Erosion control blankets shall be furnished in rolls with suitable wrapping to protect against moisture and extended ultraviolet exposure prior to placement. Erosion control blanket shall be labeled to provide identification sufficient for inventory and quality control purposes.

b. Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected.

1.7 SUBSTITUTIONS

Substitutions will not be allowed without written request and approval from the Contracting Officer.

1.8 INSTALLER'S QUALIFICATION

The installer shall be certified by the manufacturer for training and experience installing the material.

1.9 TIME LIMITATIONS

Backfilling the openings in cellular confinement systems shall be completed a maximum 7 days after placement to protect the material from ultraviolet radiation.

1.10 WARRANTY

Erosion control material shall have a warranty for use and durable condition for project specific installations. Temporary erosion control materials shall carry a minimum eighteen month warranty. Permanent erosion control materials shall carry a minimum three year warranty.

PART 2 PRODUCTS

2.1 RECOMMENDED MANUFACTURER

Presto Products Company -- Geosystems, PO Box 2399, Appleton, WI 54912-2399. Toll Free (800) 548-3424; Phone (920) 738-1118; Fax (920) 738-1222. E-Mail: info@prestogeo.com; Website: www.prestogeo.com

2.2 BASE MATERIALS

2.2.1 Polyethylene Stabilized with Carbon Black

a. Density, ASTM D 1505, 58.4 to 60.2 pounds per cubic foot.
b. Environmental Stress Crack Resistance (ESCR), ASTM D 1963: 3,000 hours.
c. Ultra-Violet Light Stabilization: Carbon Black.
d. Carbon Black Content: 1.5 to 2 percent by weight, through addition of a carrier with a certified carbon black content homogeneously distributed throughout material.

2.3 STRIP PROPERTIES AND ASSEMBLY

2.3.1 Perforated Textured Strip/Cell

a. Strip Sheet Thickness, ASTM D 5199: 10 mil, minus 5 percent, plus 10 percent. Determine thickness in the flat, before surface disruption.
b. Textured Sheet Thickness: 60 mil, plus or minus 6 mil.
c. Polyethylene Strips: Textured surface with a multitude of rhomboidal (diamond shaped) indentations.
d. Indentation Surface Density: 140 to 200 per square inch.
e. Polyethylene Strips: Perforated with horizontal rows of 0.4

inch diameter holes.

f. Perforations Within Each Row: 0.75 inch on center.
g. Horizontal Rows: Staggered and separated 0.50 inch relative to hole centers.
h. Edge of Strip to Nearest Edge of Perforation: 0.3 inch minimum.
i. Centerline of Spot Weld to Nearest Edge of Perforation: 0.7 inch minimum.

2.3.2 Assembly of Cell Sections

a. Fabricate using strips of sheet polyethylene each with a length of 142 inches and a width equal to cell depth.
b. Connect strips using full-depth, ultrasonic spot-welds aligned perpendicular to longitudinal axis of strip.
c. Weld Spacing for Geo-Cell Sections: 14.0 inches plus or minus 0.10 inch.
d. Ultrasonic Weld Melt-Pool Width: 1.0 inch maximum.

2.3.3 Section Types and Sizes

a. Cell Size: GW20V or equivalent.
b. Section Length: 20 feet, 38 feet, 46 feet.
c. Section Width: 8.5 feet.
d. Section Area: 170 square feet, 323 square feet, 391 square feet.

2.4 CELL PROPERTIES

2.4.1 Individual Cells: Uniform in shape and size when expanded.

Individual Cell Dimension:	Cell Section. Nominal Dimension plus/minus 10 percent
Length	8.8 inches
Width	10.2 inches
Nominal Area plus/minus 1 percent	44.8 square inches
Nominal Depth	8 or 3 inches

2.4.2 Cell Seam Strength Test

2.4.2.1 Short-Term Seam Peer-Strength Test

a. Cell Seam Strength: Uniform over full depth of cell.
b. Minimum Seal Peel Strength: 640 lbf for 8 inch depth, 240 lbf for 3 inch depth.

2.4.2.2 Long-Term Seam Peel-Strength Test

a. Conditions: Minimum of 7 days in a temperature-controlled

environment that undergoes change on a 1-hour cycle from room temperature to 130 degrees F.

b. Room Temperature: ASTM E 41.
c. Test Samples: Weld two 4 inch wide strips together.
d. Test: Test sample consisting of 2 carbon black stabilized strips shall support 160 pounds for test period. Test sample consisting of a carbon black stabilizer strip and a HALS stabilizer strip shall support a load of 140 lbs for test period.

2.5 TENDONED SECTIONS

2.5.1 Tendoned Geocell Sections

a. Sections with a series of aligned holes through cell walls for insertion of tendons.
b. Insert tendons in field such that they pass through section in direction of expansion.
c. Hole diameter 0.375 inch.
d. Hole position: According to requirements of tendon design.

2.5.2 Tendons --TP-31, TP-67

a. Bright, high-tenacity, industrial-continuous-filament, polyester yarn woven into a braided strap.
b. Elongation: 9 to 15 percent at break.

2.5.3 Load Transfer Pins: ATRA Clip Restrained Pins or Equivalent

a. Material: Molded high-strength polyethylene.
b. Load transfer pin within tendoned Geocell system designed to transfer load from infilled Geocells to tendon.

2.6 ANCHOR COMPONENTS

2.6.1 Anchor

a. Material: Molded high-strength polyethylene and Glass Fiber Reinforced Polymer (GFRP.)
b. Straight No. 4 GFRP rod and clips as recommended by the manufacturer.
c. Straight No. 4 steel reinforcing rod and an end cap.

2.7 RELATED GEOSYNTHETIC COMPONENTS

Related geosynthetic components shall be in accordance with Section 02378a GEOTEXTILES USED AS FILTERS.

2.8 CELL INFILL MATERIAL

Screen infill material shall be with screened topsoil, free of foreign material.

2.9 EROSION CONTROL BLANKETS

2.9.1 Erosion Control Blankets Type II

Erosion control blankets shall be a machine-produced mat of 100 percent straw. The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the mat. The blanket shall be covered on the top side with a polypropylene netting having an approximate 13 by 13 mm 1/2 by 1/2 inch mesh with photodegradable accelerators to provide breakdown of the netting within approximately 45 days,depending upon geographic location and elevation. The blanket shall be sewn together on a maximum 40 mm 1.5 inch centers with degradable thread. The erosion control blanket shall have the following properties:

Material Content

Straw	100 percent with approximately .27 kg/m^2 .50 lb/yd weight.
Netting	One side only, photodegradable with photo accelerators and approximately 8.0 kg/100 m^2 1.64 lb/1,000 ft weight.
Thread	Degradable

NOTE: Photodegradable life a minimum of 10 months with a minimum 90 percent light penetration. Apply to slopes up to a maximum 3:1 gradient.

2.9.2 Seed

See Section 02490 PLANTING for seed specifications.

2.9.3 Staples

Staples shall be as recommended by the manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

3.1.1 Site Conditions

The Contractor shall verify site conditions as indicated on the drawings. The Contractor shall notify the Contracting Officer if site conditions are not acceptable. The Contractor shall not begin preparation or installation until unacceptable conditions have been corrected.

3.1.2 Site Layout

The Contractor shall verify the layout of the structure as indicated on the drawings. The Contractor shall notify the Contracting Officer if if the layout of the structure is not acceptable. The Contractor shall not begin preparation or installation until unacceptable conditions have been corrected.

3.2 CONDITIONS FOR EROSION CONTROL BLANKET

The Contractor shall submit a construction work sequence schedule, with the approved erosion control plan a minimum of 30 days prior to start of construction. The work schedule shall coordinate the timing of land disturbing activities with the provision of erosion control measures. Erosion control operations shall be performed under favorable weather conditions; when excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped as directed. When special conditions warrant a variance to earthwork operations, a revised construction schedule shall be submitted for approval. Erosion control materials shall not be applied in adverse weather conditions which could affect their performance.

3.2.1 Site Preparation

3.2.1.1 Displacement of Cells

To avoid displacement of cell sections during construction, no heavy compaction equipment shall be allowed within 3 (three) feet of the back of the in-place cell sections.

3.2.1.2 Protecting Existing Vegetation

When there are established lawns in the work area, the turf shall be covered and/or protected or replaced after construction operations. Existing trees, shrubs, and plant beds that are to be preserved shall be barricaded along the drip line. Damage to existing trees shall be mitigated by the Contractor at no additional cost to the Government. Damage shall be assessed by a state certified arborist or other approved professional using the National Arborist Association's tree valuation guideline.

3.2.1.3 Construction Below Ground

When obstructions below ground affect the work, shop drawings showing proposed adjustments to placement of erosion control material shall be submitted for approval.

3.2.1.4 Geotextile Fabric

Geotextile fabric shall be placed underneath the geocell as shown on the plans and installed in accordance with Section 02378a GEOTEXTILE USED AS FILTERS.

3.3 INSTALLATION

3.3.1 Seeding

The Contractor shall verify that seeding will be completed in accordance with Section 02490 PLANTING.

3.3.2 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

3.4 CELLULAR CONFINEMENT SYSTEMS (GEOCELLS)

3.4.1 Subgrade Preparation

a. Excavate or fill foundation so top of installed Geocell section is flush with or slightly lower than adjacent terrain or final grade as indicated on the drawings or as directed by the Contracting Officer.

b. Install geotextile underlayers as specified, on prepared surfaces, ensuring required overlaps are maintained and outer edges of geotextile are buried as shown on plans.

3.4.2 Placement and Anchoring of Tendoned Geocell Sections

a. Feed precut lengths of tendon material through aligned holes in cell walls of Geocell section before expanding individual sections into positions. Tie off end of tendons with a knot that cannot pass through hole in cell walls. Tie knots to provide full tendon strength and not slip under tensioning of tendon.

b. Anchor tendon and Geocell section at slope crest and expand down slope surface.

c. Where intermediate anchoring of slope surface is not permitted due to underlying geomembrane, attach specified restraint pins to tendons at predetermined intervals to achieve necessary load transfer.

d. In situations where penetration of subgrade is permitted, anchor tendoned Geocell section with specified anchors in prescribed pattern throughout slope surface. At each anchor location, form a loop in tendon, insert anchor, and drive into subgrade.

3.4.3 Placement of Infill

Place infill in expanding cells with suitable material handling equipment, such as backhoe, front-end loader, conveyor, or crane-mounted skip. Limit top height to a maximum of 3 (three) feet. Avoid displacement of Geocell sections by infilling from crest to toe of slope. Overfill and compact infill in accordance with consistency of material and cell depth as follows:

a. Overfill screened topsoil between 1 to 2 inches and lightly tamp or roll to leave soil flush with top edge of cell walls. Apply specified surface treatment.

b. Overfill loose granular materials approximately 1 inch and compact with a plate tamper or a backhoe bucket. Remove loose surface material so that infill is flush with top edges of cells.

c. Manually compact or vibrate concrete. Screed surface of cast-in-place concrete infill to ensure finished surface is flush with top edges of cells.

3.5 EROSION CONTROL BLANKETS

a. Erosion control blankets shall be installed as indicated and in accordance with manufacturer's recommendations. The extent of erosion control blankets shall be as shown on drawings.

b. Erosion control blankets shall be oriented in vertical strips and anchored with staples, as indicated. Adjacent strips shall be abutted to allow for installation of a common row of staples. Horizontal joints between erosion control blankets shall be overlapped sufficiently to accommodate a common row of staples with the uphill end on top.

c. Where exposed to overland sheet flow, a trench shall be located at the uphill termination. The erosion control blanket shall be stapled to the bottom of the trench. Backfill and compact the trench as required.

d. Where terminating in a channel containing an installed blanket, the erosion control blanket shall overlap installed blanket sufficiently to accommodate a common row of staples.

3.5 CLEAN-UP

Excess material, debris, and waste materials shall be disposed offsite at an approved landfill or recycling center. Adjacent paved areas shall be cleared. Immediately upon completion of the installation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed. Signage shall be in accordance with Section 10430 EXTERIOR SIGNAGE.

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